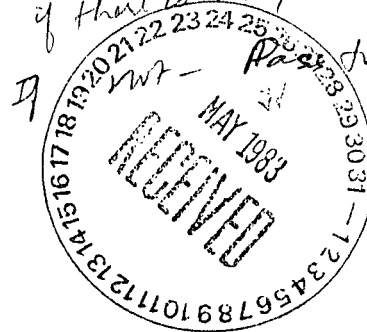


STATE OF CALIFORNIA

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD—
CENTRAL VALLEY REGIONSAN JOAQUIN WATERSHED BRANCH OFFICE:
3374 EAST SHIELDS AVENUE, ROOM 18
FRESNO, CALIFORNIA 93726
PHONE: (209) 445-5116SFUND RECORDS CTR
2360371

Bill

Would you please
review this and see
if there is anything of our concern?Pass to Matt for
filing
5/27

25 May 1983

Mr. Gordon A. Turl
Getty Refining and Marketing Co.
P. O. Box 1476
Bakersfield, CA 93302

WASTE DISPOSAL ACTIVITIES - FRUITVALE OIL FIELD, KERN COUNTY

We have recently reviewed the Soil Assessment Study and ground water quality monitoring to assess the effects of past waste discharges at the Company's facility in the Fruitvale Oil Field. A copy of the staff report dated 25 May 1983 is enclosed.

As indicated in the staff report, the soils and water data submitted for Sites 1, 2, 3, and 4 is adequate, and excavation or additional sampling is not necessary. We do have no objection to your proposal to use stockpiled soils from Sites 1 and 2 to 15 in the containment berms at the facility provided the information outlined in the staff report (under the heading "Soil Stockpiles") is provided to us prior to initiating construction.

We have concerns regarding results of the ground water monitoring for the first three quarters at the facility. The data indicates that degradation of local ground water has occurred as a result of past waste disposal activities. In addition, we are concerned about high contaminant levels in the soil, and potential water quality impacts associated with previous land farming activities at the facility. We also believe that more information is needed regarding wastes previously disposed at Site 5.

To address the above concerns, we are requesting Getty Refining and Marketing Company to perform the following tasks in accordance with the dates indicated. The work should be performed under the direction of a registered engineer or engineering geologist competent in investigations of this nature.

Task No. I - Development of Plans for Problem Assessment

Prior to 1 August 1983, submit a report (subject to our review and concurrence) which addresses the following:

1. Identification of all potential contaminants in ground water that evolved from disposal of wastes to unlined facilities.
2. A plan for determining the vertical and lateral extent of ground water degradation from contaminants identified in Item 1 above. The plan should include a time schedule for initiation and completion of the study.
3. Identification of all potential contaminants contained in previous discharges and spillage at Sites 4 and 5.
4. A plan for determining the depth of contaminants (identified in Item 3 above) at Site 4 at locations where excessive chromium concentrations exist, including possible penetration through the concrete debris. The plan should include a time schedule for initiation and completion of the study.
5. A description of past activities in the land farming area and assessment of related water quality impacts. This should include:
 - a. Map showing the location of where the land farming occurred and areas where new construction is located.
 - b. A plan for identifying the depth and extent of contaminants in the unexcavated soils not covered by new construction. The plan should include a time schedule for initiation and completion of the study.
 - c. Depth of soils excavation that occurred for the new facilities.
 - d. Toxic organic content of the excavated soils.
 - e. A plan for determining present and potential impacts on local ground water associated with contaminants in the soils in areas where new construction has occurred. The plan should include a time schedule for initiation of the study.

Task No. II - Problem Assessment Implementation

Initiate and complete the studies for Items 2, 4, 5b, and 5e of Task No. I according to the time schedules.

Attached is a list of toxic organic and inorganic substances frequently found in refinery wastewater. We are concerned that these substances have been present in the waste streams discharged to unlined surface facilities. Does the Company have any analytical data or other information that indicates which of these substances have not been present in any of the wastes? This needs to be addressed in Items 1, 4, 5b, 5d, and 5e of Task No. I.

Mr. Gordon A. Turl

-3-

25 May 1983

Finally, new waste discharge requirements will be developed to address the change to deep well injection that has occurred since the adoption of waste discharge requirements in October 1977.

Because the Company changed its method of disposal, the California Water Code requires that a completed Report of Waste Discharge must be submitted with an appropriate filing fee. A Report of Waste Discharge form and filing fee schedule are enclosed. It will also be necessary to submit an engineering report concerning the injection disposal activities, addressing those items listed on the enclosed "Information Needs for Wastewater Injection". The engineering report should include identification of concentrations of all potential contaminants in each waste stream. The enclosed list of E.P.A. classified pollutants indicates those constituents whose concentrations should be determined. Also, concentrations of polynuclear aromatic hydrocarbons need to be determined. An analysis need not be performed for those constituents known not to be present, provided documentation of their absence is presented for each waste stream.

Please return the completed Report of Waste Discharge and requested engineering report by 1 August 1983. Following receipt of this information, we will formulate tentative waste discharge requirements for review by you and interested public agencies prior to formal presentation to the Board.

If you have any questions on these matters, please call C. Scott Smith at this office.



F. SCOTT NEVINS
Senior Engineer

CSS:iay

Enclosures

cc: ~~Mr.~~ Mohinder Sandhu, Department of Health Services
Mr. Vern Reichard, Kern County Health Department

CENTRAL VALLEY REGIONAL WATER QUALITY CONTROL BOARD
MEMORANDUM

TO: F. Scott Nevins *fsn* 25 May 1983
FROM: C. Scott Smith
SUBJECT: STAFF REPORT ON GETTY REFINING AND MARKETING COMPANY - FRUITVALE
OIL FIELD, KERN COUNTY

Getty Refining and Marketing Company (GRMC) operates a refinery in western Bakersfield. Wastewater is generated in the refining of crude oil.

Waste discharge requirements were adopted in October 1977 to govern the disposal of wastewater to unlined ponds at the facility. Compliance with these requirements was achieved in July 1979 when the discharge to unlined ponds was terminated and deep well injection of all wastewater was initiated.

Ground Water Quality Monitoring

In March 1981, GRMC was issued an Interim Status Document (ISD) by the then Hazardous Material Management Section of the Department of Health Services requiring the implementation of a quarterly ground water monitoring program to determine the facility's impact on unconfined ground water. In accordance with the ISD, three wells designated as downgradient ground water monitoring wells (D1, D2, and D3 on Figure 1), and one monitoring well designated as up-gradient (U1) were installed.

Results of the monitoring wells for the first three quarters have been submitted and are summarized as follows:

1. All monitoring wells have consistently exhibited concentrations of phenols and iron in excess of drinking water standards.
2. Well Nos. U1 and D2 have exhibited concentrations of lead and arsenic in excess of drinking water standards for two of the three quarters.
3. Manganese concentrations are consistently in excess of drinking water standards in well U1 and in all but two of the nine samplings for Wells D1, D2 and D3.
4. Chromium concentrations are in excess of drinking water standards for one sampling of Well U1 and D2.
5. In cases where excessive concentrations of a given constituent are found in the designated downgradient well(s), Well U1 has consistently exhibited higher concentrations for the same constituent in the same quarter.

Comments and Recommendations

The ground water quality monitoring results submitted to date preliminarily indicates that ground water quality degradation has occurred as a result of waste disposal practices. Phenols, arsenic, chromium, and lead, all of which have been found in ground water in excessive concentrations at the facility, are among the contaminants commonly associated with refinery wastes. Therefore, GRMC now needs to expand their monitoring program to determine the vertical and lateral extent of ground water degradation.

While available ground water level data indicates that Well No. U1 is presently upgradient of Well Nos. D1, D2, and D3, it is not clear that Well No. U1 is upgradient of all past disposal activities. The high contaminant levels exhibited by Well No U1 over D1, D2 and D3 suggest a source of contamination local to U1. GRMC should, therefore, investigate appropriateness of the local of U1. This may require the sampling of ground water upgradient of U1 at some location clearly outside the influence of past disposal activities for comparison purposes.

Soil Assessment Study

In February 1983, GRMC submitted the results of a soils testing program to determine the levels of contaminants at eight specific sites at the refinery where wastes have been previously disposed. The locations of the sites and their prescribed uses are indicated in Figure 1. The study was preliminary in nature and was not intended to define the full range of contaminants and their distribution in the soils.

On 26 April 1983, you and I met with Ms. Sue Luft and Mr. Gordon Turl of GRMC to tour the facility and visit each of the eight disposal sites. The GRMC representatives had specific questions regarding (1) cleanup of the bundle cleaning area and percolation ponds (Sites 2 and 8 respectively) so that new facilities could be constructed at these locations, and (2) the use of stock-piled soils (Sites 6 and 7) for spill containment berms.

Summarized below are the results of the soils testing program and areas discussed on 26 April at GRMC.

Heat Exchanger Bundle Cleaning Area (Site 1)

Sludge evolved in the cleaning of heat exchanger bundles commonly contain substantial concentrations of chromium. A composite sample was collected at each of six locations at varying intervals and analyzed for a full range of heavy metals and arsenic. Concentrations of chromium and other constituents tested were consistently well below the CAM TTLC guidelines.

25 May 1983

The GRMC representatives inquired as to the need for any additional sampling and/or excavation before they proceed with new construction at the site. From the results of the initial study, it doesn't appear that any excavation or additional sampling is necessary at this site.

Gas Treating Plant (Site 2) and Poly Plant (Site 3)

Three composite samples were collected at each site at varying intervals and were analyzed for phenols and lead. Chromium concentrations were well below the TTLC guideline and phenols concentrations were negligible. ~~From the results of the initial study, it doesn't appear that any excavation or additional sampling is necessary at these sites.~~

Drum Storage Area (Site 4)

A total of 29 composite samples were collected at 26 locations over varying intervals between 0 and 10 feet, and analyzed for cyanide and chromium. Of the 22 samples that were collected from 0 to 1 foot, ~~one contained concentrations of total chromium greater than the TTLC of 50 mg/kg.~~ Concentrations of the 11 samples ranged from 63 to 200 mg/kg. No additional concentration data is available at these 11 locations as concrete construction debris was encountered within 2 feet from the surface.

Additional sampling is needed to determine the depth and extent of excessive chromium concentrations in the soils. Samples collected for this purpose should be discrete rather than composite, and analyzed for soluble chromium using the Department of Health Services' waste extraction test (WET) to determine the degree of any soils excavation necessary to protect ground water. ~~On addition, other heavy metals found in drums previously stored at this site should be addressed in the additional sampling.~~

Finally, with the exception of scans for PCB's and priority pollutant pesticides, no toxic organics have been analyzed. ~~Additional sampling should address any toxic organics found in drums previously stored at this site.~~

Lube Oil/Acid Waste Pond (Site 5)

A total of six composite samples over varying intervals were collected at two locations and analyzed for a full range of heavy metals and arsenic. ~~Concentrations of all constituents tested were generally well below the TTLC guidelines.~~

Before it can be determined if any additional sampling is necessary, ~~we need information from GRMC on the types of toxic organics found in the wastes, or evolved in the interaction of wastes, previously disposed at this site.~~

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Soil Stockpiles (Sites 6 and 7)

Areas previously utilized for land farming of refinery wastes have been excavated and stockpiled to allow for construction of new facilities. From both stockpiles, four composite samples (two from 0 to 1½ feet and two from 0 to 21½ feet) were collected and analyzed for a full range of heavy metals, phenols and arsenic. All eight samples exhibited concentrations of ~~total lead~~ ranging from 3 to 4 times greater than the CAM TLIC of 50 mg/kg. ~~Three of the eight samples exhibited total chromium concentrations ranging from 1½ to 4 times greater than the CAM TLIC of 50 mg/kg.~~

The presence of high concentrations of lead and chromium in the stockpiled soils gives us concern regarding the soils still in place at the land farming area. We need to know if there are areas that were not excavated and, if so, the depth and extent of contaminants in the soils. For the areas where new construction has occurred, there is concern that the level of contaminants in the unexcavated soils is not known in an area characterized by shallow ground water with frequent level fluctuations. Therefore, we need to know (1) the depth and extent of contaminants in the soils in areas where new construction has not occurred, and (2) the present and potential impact on ground water quality posed by soils with contaminants now covered by new construction.

On 28 February we received a letter from GRMC requesting that they be permitted to reuse the stockpiled soils as a berm material at their facility. On 23 March we receive a copy of a letter in which the Department of Health Services indicated to GRMC their approval to reuse the material for the proposed purpose provided the soil is capped.

At the 26 April meeting, the GRMC representatives indicated that the berms would be designed to minimize contact with yard drainage and that runoff would be kept from migrating to surface water. The preliminary plans which were discussed appear adequate to protect water quality. ~~However, the following, more specific, information should be provided before construction of the berms is initiated.~~

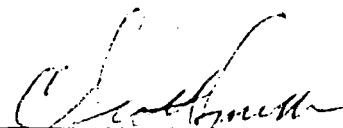
1. Provisions for preventing (a) contact of yard drainage with the berms; (b) any runoff from berm areas from reaching surface watercourses or drainages; and (c) ponding of any runoff from berm areas.
2. General cross section showing berm height and side slope.
3. Location of the berms.
4. Means for identification of the contaminated soils to prevent any future misuse or handling.

25 May 1983

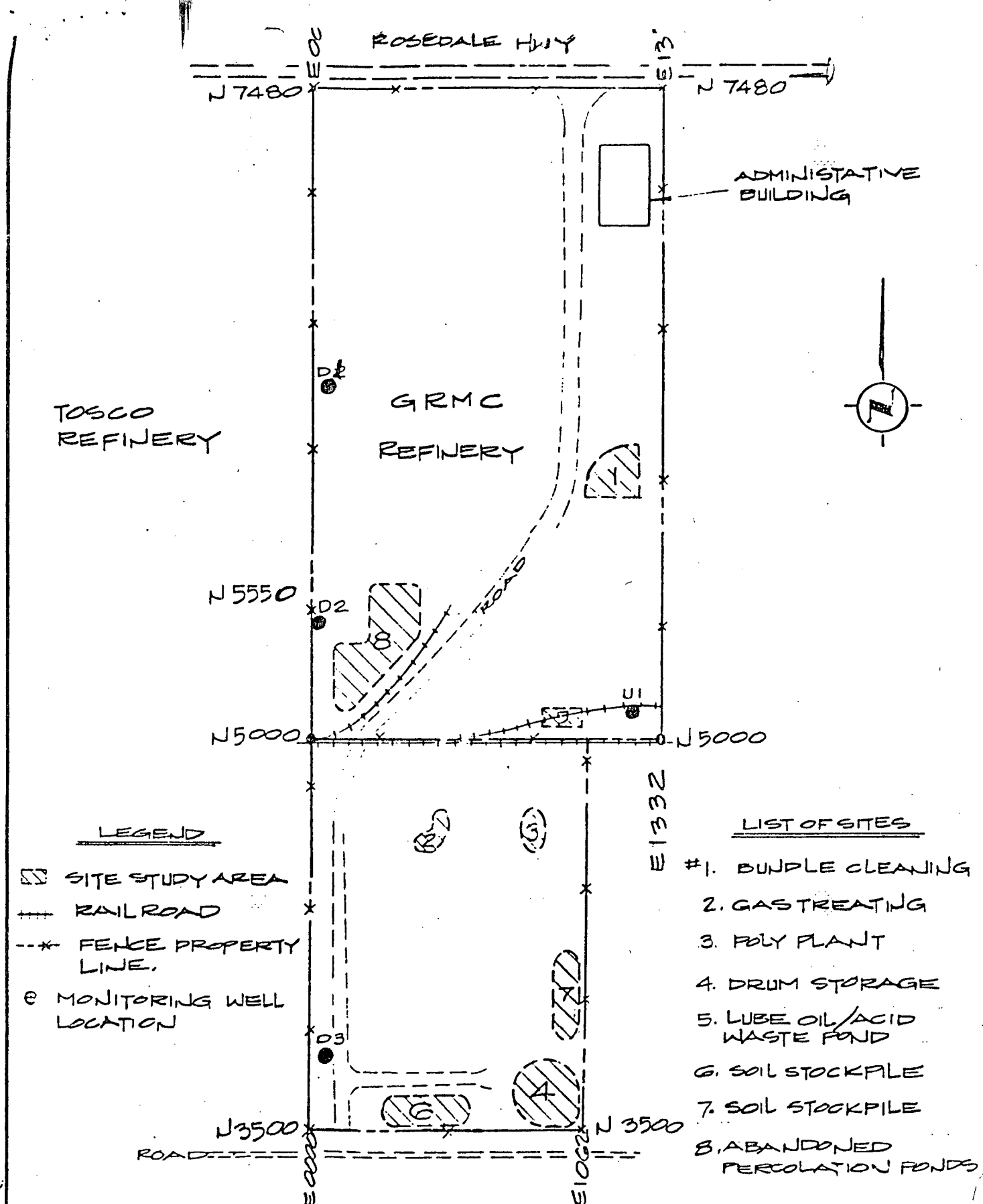
Abandoned Percolation Ponds (Site 8)

The ponds were used for the disposal of refinery wastewater until July 1979. From two locations, three composite samples were collected at various intervals between 0 and 20 feet, and analyzed for a full range of heavy metals, phenols and arsenic. Concentrations of heavy metals and arsenic were consistently well below the MCLC guidelines. Phenol concentrations were negligible.

The GRMC representatives inquired as to the need for any additional sampling and/or excavation before they proceeded with the construction of a water treatment plant on the site. From the results of the initial study, it doesn't appear that any additional sampling or excavation is necessary.


C. SCOTT SMITH
Staff Engineer

CSS:iay



SITE STUDY AREA WITHIN THE GRMC REFINERY
BAKERSFIELD, CALIF.

DESIGNED BY :

DRAWN BY : J N SEIBOLD

PROJECT NO : 1-3015.1

SCALE : 1" = 500'-0"

DATE : 6-5-82

FIGURE

1